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***Sexual Nature?* (Re)presenting Sexuality and Science in the Museum**

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Abstract

The past 15 years have seen dramatic changes in social norms around sex and sexuality in the UK and worldwide. In 2011, the London Natural History Museum (NHM) contributed to these debates by opening the temporary exhibition *Sexual Nature*, which aimed to provide 'a candid exploration of sex in the natural world' whilst also drawing in an under-represented audience of young adults. *Sexual Nature* provides an opportunity to explore MacDonald's 'politics of display' in the mutual construction of (public) scientific knowledge, society and sexuality, at a time of intense contestation over sexual norms. Whilst *Sexual Nature* both reflected and contributed to major reframings of sexuality and what science can say about it, the assumption that it would be possible to present this topic as morally neutral, reliable and uncontested, in line with traditions of public science, proved to be problematic. The language of the exhibition moved back and forth between human/animal similarity and difference, and between scientific and cultural tropes as the NHM tried to maintain epistemic authority whilst also negotiating the moral boundaries of acceptable sexual behaviour. The topic of sex pushed the museum far beyond its usual expertise in the natural sciences towards the unfamiliar territory of the social and human, resulting in an *ad hoc* search for, and negotiation with, alternative sources of expertise. Boon et al's co-curation approach to exhibition building has the potential to extend the NHM's audience driven strategy, whilst also producing a more coherent and nuanced exhibition about the science of sex.

Keywords: natural history; animal studies; science in public; museums; sex; sexuality

1. Introduction

Since the middle of the last century, the UK has undergone a period of intense change in social norms concerning who is allowed to have sex with who, under what circumstances, and what acts are considered to be generally acceptable. Following the decriminalisation of same-sex sexual activity in the late 1960s, the pace of change has intensified in the past 15 years, which have seen changes in legal frameworks around discrimination, gender recognition, adoption and marriage supporting the rights of lesbian, gay, bisexual and transgendered (LGBT) people. Alongside these legal changes, social attitudes around sexuality have also transformed, with a general relaxation of sexual norms and greater visibility of sexuality in public spaces. As such, sexual norms have for some time been the subject of ongoing and often heated public negotiation and debate, across the UK and worldwide (Attwood, 2006). Scientific and medical understandings of both human and animal sexualities have formed a significant component of these debates (Lancaster, 2003; Miller, 1995) and indeed have done so since at least the nineteenth century (e.g. Foucault, 1976; Hegarty, 2013; Longino, 2013; Terry, 1999).

In February 2011, the London Natural History Museum (NHM) opened the temporary exhibition *Sexual Nature*. The show aimed to provide a 'candid exploration of sex in the natural world' (NHM

2011a), and included animal sexual behaviour, the evolution of sex and the origins of human sexuality. From the start, the exhibition was designed to grab attention: from pop culture references and slick design, to the celebrity studded launch event coinciding with Valentine's Day. New taxidermy mounts were commissioned of animals mating in – often seemingly unlikely - positions; and the exhibition encompassed further events including evening debates and a 'Snail Sex Show'. These approaches paid off: *Sexual Nature* was highly successful, attracting almost five million visitors and winning the Museums+ Heritage 2012 Award for 'best temporary or touring' exhibition, for its 'brave' and 'risk taking' approach (Anon, 2012).

Sexual Nature provides us with an opportunity to consider how contemporary debates around sexualities and sexual norms are being negotiated in an unusual cultural setting – the public museum. Of particular interest to us as scholars of science and society is the location of the NHM, both as a site of scientific knowledge production and as it describes itself - 'a voice of authority on the natural world' (NHM 2011b, p1, 2). Through an analysis of the exhibition content and of interviews with the scientists and curators involved in its production, we aim to answer the following questions. What can this exhibition tell us about scientific and social constructions of modern sexualities? How does the exhibition reflect changing scientific and societal debates about the origin, existence and acceptability of non-reproductive sexual behaviours¹ in both human and nonhuman animals? More pragmatically, we also consider how and why this exhibition came about in the particular scientific, commercial and cultural contexts of the NHM, at a time when the museum sector is undergoing a period of change. Museums are moving from sites solely dedicated to the representation of knowledge to more active sites of participation, commerce and dialogue with audiences. As such this paper will also contribute to debates around the display and communication of science in public and cultural settings.

In order to address these questions we have integrated ideas from three overlapping literatures, outlined in the following section: science and natural history in public, sexualities, and the contemporary museum sector. We go on to use Sharon Macdonald's (1998) analysis of the politics of display in museums as a framework for understanding both the frontstage - the final exhibit as a text to be analysed, alongside the backstage – the production processes which went into building the exhibition. We conclude by discussing our findings critically, exploring the implications for multiple readings of *Sexual Nature* both within the UK and internationally, and suggest alternative strategies for exhibiting such an uncertain and politically contested topic.

2. Interrogating *Sexual Nature*

The assumptions, rationales, compromises and accidents that lead to a final exhibition are generally hidden from public view: they are tidied away along with the cleaning equipment, the early drafts of text and the artefacts for which no place could be found. (Macdonald 1998, p. 2)

Though museums and exhibitions have been viewed in much the same way as texts or mass media, Macdonald argues such discursive formations should not simply be interpreted in terms of the knowledge on display. As the quote above suggests, they are also made up of the various knowledges, decisions and objects that have gone into their construction whether or not they end up in the final product. We agree that an analysis of the exhibition solely as a text can only ever be after the fact theorising, and that moving beyond this allows us to explore the contests and contingencies involved in creating *Sexual Nature*. This can also offer insights into processes of (public) 'science in the making' (Latour, 1987) and how these are implicated in ongoing constructions of sexuality in society.

As sites of scientific knowledge production, display and communication, museums provide one of the most important examples of 'public science' (Turner, 1980, p. 589). Traditionally the public image of science, as displayed in science and technology museums, has been represented as one of:

..sure and solid progress in the mastery of nature....science emerges as a fixed body of knowledge and practice, more or less totally beyond either doubt or dispute, and in both cases, two relevant social groups are strangely absent: first, the authors of all these achievements, scientists themselves; and second, the wider culture within which these people pursue their work. (Durant 1992, p. 10)

Macdonald (1998), drawing on Foucault (1979), further argues that the display of science in museums is a space in which science and culture are co-constructed. Thus the science museum or exhibition is not simply involved in the representation of science, but in doing this also constructs a particular representation of culture. Representations of scientific knowledge, set in such a formal display, present objective ways of seeing both science and culture, and as Macdonald argues, 'representation - particularly rendering things up to be viewed - becomes a key means of apprehending and "colonizing" reality' (p.10), thus having broader political implications than simply our understanding of science.

Foucault (1979) has argued that politics in this broader sense is concerned with power. In his interpretation knowledge and power are mutually implicated; with power being involved in the construction of truths and knowledge having implications for power. Traditionally knowledge production, particularly scientific knowledge production, has been separated from any connection with politics and hence power (Yearley, 1994). Yet in Foucault's interpretation the display of knowledge is a form of governance, in the sense that representing certain facts or particular truths can influence how people understand the world, which in turn can influence how people act or perceive they are allowed to act. This is particularly the case if these facts are used to legitimate particular political ideals. Thus displays of science, which are always tied up with representations of truths and knowledge, will also be involved with questions of power and politics.

In contrast to most science museums, natural history museums have often had scientific research as a primary function (with public display as a secondary or even absent activity), and therefore have also been important sites of negotiation over methods of observation, collection, categorisation, communication and knowledge building about the natural world (Meyer, 2010; Star and Griesemer, 1989). They not only represent the public image of science as described above, but also that of natural history and its particular research traditions, conveying to audiences the authority, wonder and spectacle of Nature (e.g. Mitman, 1999; Gouyon, 2011; Rader and Cain, 2014). Such displays have therefore shaped understandings of what is considered to be natural, an idea which has often been used to support arguments about politics, the social order, and how individuals should act (Hansen, 2006; Longino, 2013).

These intersections between science, society and the natural world have led to a rich vein of STS research exploring how the biological and behavioural sciences have been mutually shaped by societal gender norms, particularly around differing expectations of male and female sexual behaviours (e.g. Haraway, 1990; Milam, 2010; Pettit, 2012; Rees, 2009). In particular, scientific explanations of animal behaviour can function simultaneously as stories about humans and human morality, precisely because animal behaviour is generally considered to be 'natural' (Beisel et al., 2013; Daston & Mitman, 2005). In turn, zoologists, anthropologists and evolutionary biologists have often used narrative to do the essential work of theory-building: however, this means that such stories can rapidly shift from explanations of animal behaviour to normative stories about humans and back again (Cassidy, 2007; Haraway, 1990; Latour and Strum, 1986).

These constructions of gender via the naturalness of sexed bodies and sexual behaviour have further implications for constructions of sexuality. These longstanding traditions of mutual shaping between scientific discourses, sexual norms and their governance, have contributed to a tendency for popular natural history to represent animals not only as traditionally gendered, but also as reproductive, monogamous and heterosexual (Crowther, 1997; Mills, 2013). In recent years, these representations have been increasingly challenged by the increasing public visibility of same-sex and non-reproductive sexual behaviour in animals, for example in cases of 'gay penguins' pairing up to raise chicks in zoos (Talbot and Matus, 2012). There has also been a re-consideration of the evidence of same-sex and non-reproductive sexual behaviours in animals (e.g. Bagemihl 1999, Roughgarden 2004). Rather than discounting such behaviours as exceptions or aberrations as they did in the past, scientists are increasingly recognising them as a common, even normal aspect of animal life (e.g. Bailey and Zuk, 2009). The existence of such behaviours has been relatively uncontested: however the search for convincing scientific narratives to explain *why* has proved more troublesome. By embodying non-reproductive sex acts, these behaviours challenge basic tenets of evolutionary biology, particularly theories of sexual selection (competition for opposite sex mates as a driver of evolutionary change) (Vasey and Sommer, 2006). Via *Sexual Nature*, the NHM was therefore contributing directly to these debates, which have ranged freely across both science and popular culture.

Sexuality, society and museums

These changing scientific understandings of both human and animal sexualities are situated in wider and constantly shifting moral and political norms. Human sexuality, as Weeks (1985) writes, it is far from straightforward, 'there is no simple relationship between sex and society, nor a simple "sex" and "society" – the mediating elements are words, attitudes, ideas and social relations' (p.4). With no set relationship between acts and meanings, everything within the domain of sexuality is constructed (Vance 1991). Yet at the same time sex is often framed as of central significance to public and private life. As a result, matters concerning sex and sexuality are charged with moral meaning and become the 'focus for very powerful feelings' (Cartledge 1983, p. 170) – contemporary conflicts around the definitions and evaluations of sexual values and behaviours acquire immense symbolic weight and are bitterly contested (Rubin 1994, p. 161).

Recent debates about the sexualisation - and related mainstreaming - of pornography in contemporary Western society emerge from, and play on, this 'excess of significance' (Rubin 1994, p. 11). In these discussions, terms like sexualisation and pornification designate how sexual images and tropes, including those derived from the language, codes and conventions of pornography, have infiltrated mainstream culture to become part of everyday lives (Attwood 2010, Boyle 2010). Yet this mainstreaming does not necessarily lead to any unpicking of the socially constructed nature of sexuality, or greater acceptance of differing sexualities and variant forms of sexual practices (Wilkinson, 2009).

The ways in which sex and sexuality have become increasingly important as a marketing device for businesses are a good example of such mainstreaming (Smith 2010, Reichert and Lambiase 2006). Historically, organisations which engage in forms of sexualised commerce as their core product are often heavily stigmatised, and must employ management techniques to overcome this spoiled identity (Voss 2015), which may involve appeals to taste (Comella 2009). Considerations around sexuality – and especially commercial sexuality – are also heavily conditioned by notions of taste and class. Building on Bourdieu's (1984) work on tastes as markers of class, power and privilege, both manifesting and resisting cultural hierarchies, and reflecting and reproducing cultural capital, Katherine Sender (2003) describes how these are actively deployed when marketing sexuality, particularly around aesthetics. Drawing on the example of gay men's magazines, Sender argues that,

in spaces of commercial sexuality, judgements of taste, and thus class, drive editorial and curatorial decisions, rather than 'cut and dried distinctions between the too sexual and the acceptable' (Sender, p.350). Thus to sell sex in (relatively) mainstream media spaces, one must contain it by distancing it from expressly commercial sexual exchanges through appeals to aesthetic tastefulness. This strategy has, Sender notes, had a 'chilling' (p.359) effect on LGBT publications, limiting the extent to which they can reflect debates around queer and radical sexualities.

Liddiard (2004) has noted the ways in which museums have employed sexuality and sexual behaviour as topics of display (here the history of sexuality, homosexuality, and love and romance) in museums, in order to attract larger and different audiences. He argues that using sex to sell museums can be remarkably effective, and demonstrates the commercial success of displays about sexuality in several recent exhibitions. While Liddiard focuses on arts and cultural museums, there have been several examples of science and natural history museums using this strategy (Raj, 2012, Seidler, 2006). This occurs within the context of wider changes in the museum sector in recent years, including changing funding regimes, visitor expectations, models of science communication and relationships with audiences (e.g. Bandelli and Konijn, 2015; Louw and Crowley, 2013). There has been a pressure towards the selection of more commercial, interactive or controversial topics (such as sex). Museums are also transitioning from institutions focused on dissemination of information to sites of active participation and engagement with visitors (McPherson 2006; Sunderland, 2012). Alongside changing relationships with audiences, museums are also moving towards more market-oriented modes of operation (Rentschler and Hede, 2013).

3. *Sexual Nature*: the exhibition

To undertake our analysis of *Sexual Nature*'s frontstage (the exhibition) and backstage (the making of the exhibition) we have combined observational and textual analyses, derived from our own visits (separately and together), study of secondary material (online and mass media coverage), and interviews with individuals involved in developing the exhibition, including two members of the NHM curatorial team and two expert external consultants. Interview codes are as follows: SC = scientific museum curator; EC = exhibition museum curator; AB = academic biologist; AP = academic psychologist. Before moving into our analysis we first provide a brief description of a visit to the exhibition.

3.1 A visit to *Sexual Nature*

You buy your £8 ticket from the front desk at the NHM. Taking a left turn by the *Diplodocus* skeleton you head down the hallway, steering your way past the many visiting schoolchildren and the dinosaur gift shop, until you get to the exhibition entrance. Your ticket is checked, and you walk in to a corridor walled by sheer black curtains which shield the hall ahead and guide you around a corner. Straight ahead is a large orange neon sign saying 'Sex'— and as you enter the main high-ceilinged room of the exhibition proper the lights are low and a loop of jazz music is playing softly. A large screen shows a film depicting several bonobos in a forest doing something enthusiastic and probably rude, and the heading on the adjacent sign asks you to:

Leave Your Baggage at the Door

Some of the sexual activities of other animals may be shocking to us, including some outlawed in human society, like forced sex....But we cannot judge other animals by our own moral codes, just as we don't base our rules on their beliefs. Put aside your preconceptions and learn a thing or two about how it is for them (NHM, 2011c)

The first section you come to asks 'What is sex?'² A sign marked 'Sexual Healing' acknowledges there is no single explanation for the evolution of sex in the first place, and that 'scientists continue to puzzle over how it became so widespread and influential'. Large black and white soft-focus photos of animals *in flagrante* – butterflies, dolphins, deer – hang along the walls. Around a corner, several spectacular taxidermy mounts are displayed: an adult stag deer, and several pairs of animals mating (Fig1). There are displays on the shape of vaginal canals, sperm plugs, and males fighting for female partners, in an area titled 'Sex and Violence'. You can sniff tubes of pheromones, listen to mating calls, and see Isabella Rossellini describe the sex lives of various animals – whilst dressed as them – on video displays. The sound of Rossellini mimicking an orgasmic something-or-other carries throughout the hall.³



Fig. One: Red foxes locked together during mating. Image © The Trustees of the Natural History Museum, London, reproduced with kind permission from The Natural History Museum, London.

The focus then shifts to relationships and family structures in the animal world. A massive gorilla is displayed as an example of the ultimate dominant male and *paterfamilias*. Further on, a series of displays focus on other behaviours – non-monogamous relationships, female dominance, gender transition, homosexuality – in what appears to be a general theme of non-conformity.

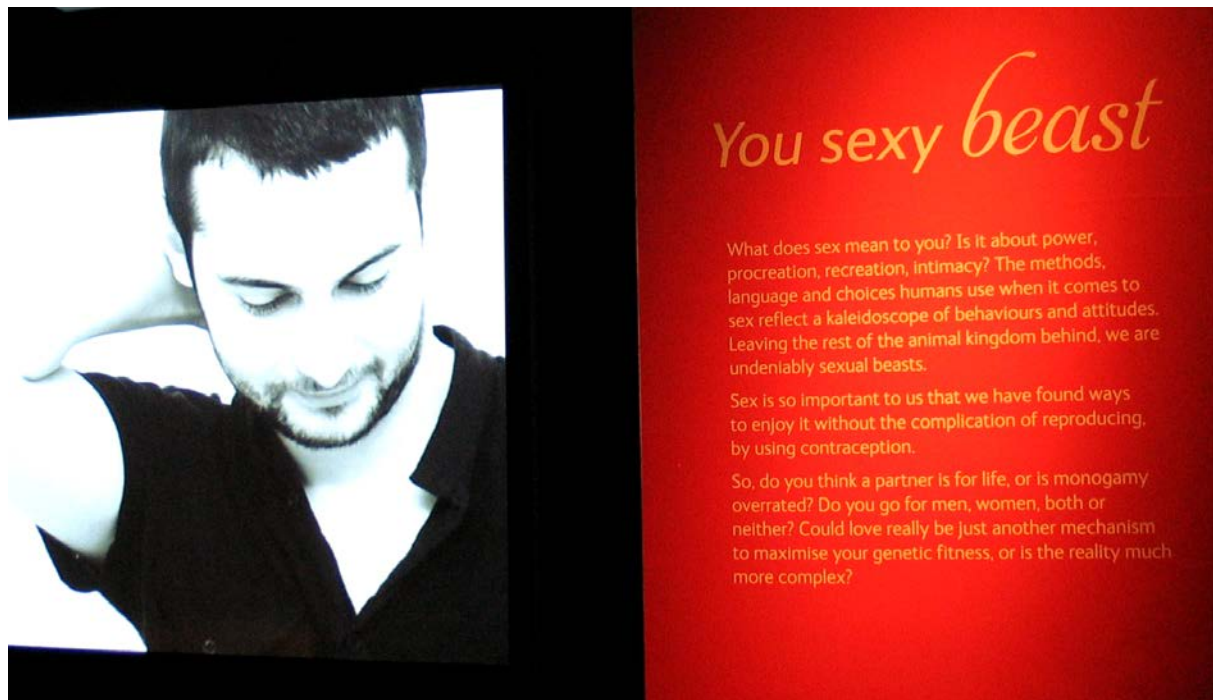


Fig Two: *You Sexy Beast*. Image © Angela Cassidy

You turn another corner, to be greeted by a large screen, projecting images of people of a range of genders, ages and ethnicities, entitled 'You sexy beast' (Fig. 2). Following this, the final section is a separated space detailing the human world. There is little about sex as a bodily act, but plenty about lust and love – a glass case filled with objects including a fireman's helmet, and a red stiletto shoe illustrates factors involved in sexual attraction. A digital display collects answers to questions including 'Should humans be monogamous?' and 'What is sex for?'. Personal ads are on show next to telephones which you can dial to hear the ad of your choice; and at the end, you can contribute to a wall of notes and sex-themed fridge poetry. You exit through the brightly lit mini gift shop, filled with sex related books, animal-themed jewellery, 'Snog Me Senseless' lip balm and *Sexual Nature* tea-towels. And then you leave, through a quiet, anonymous white corridor which feels very far from the rest of the museum.⁴

3.2 Analysing *Sexual Nature*

Frontstage: reading the exhibition

A series of cultural tropes were used to create an overall atmosphere unusual for the NHM: black and white prints; low lighting; displays in brightly lit, clear glass cabinets; soft music; sheer curtains; and the calligraphy-style fonts. This was further reinforced through references to art-house cinema via the Rossellini videos, and via a large display of beetles, similar in style to Damian Hirst's butterfly paintings. The overall effect was one of discretion, taste and luxury: by creating such an atmosphere, the exhibition drew upon, and constructed, ideas about class, taste and (hetero)sexuality. This atmosphere helped to neutralise the potentially offensive material within the exhibition and legitimise the appearance of sex in the respectable, family oriented setting of the NHM, using very similar tactics to those observed in other media, commercial and cultural settings (Comella, 2010; Sender, 2003; Voss, 2015).

Throughout the exhibition, *Sexual Nature* presented the idea that there are continuities between humans and other animals, whilst simultaneously reinforcing ideas of human exceptionalism and difference (Haraway, 2007). For example, the introductory statement quoted above framed the experience in terms of human/animal difference, encouraging the visitor to put aside preconceptions about normality when considering what 'they do'. This was underlined by the repeated usage of 'us' and 'them' to denote humans and animals, or captions such as 'Out in the wild, anything goes'. This movement back and forth framed the exhibition as a place where scientific stories about animals would be told in order to learn about humans, and *vice versa* (Cassidy, 2007; Haraway, 1990; Latour and Strum, 1986).

As our description demonstrates, *Sexual Nature* challenged visitors to re-examine their understandings of what is natural in sexual activity and attraction, and the relationship between humans and other animals with reference to sexual behaviour, as well as their own experiences of sexuality. A running theme was the challenge of conventional ideas about the biological bases of male dominance and monogamy, with exhibits emphasising that these were not the norms in the animal kingdom. For example, a sign describing animal mating systems read:

Ménage a ? It doesn't have to be the guy on top. While the alpha male may lay down the law, in some animal societies rules are made to be broken. Evolution has provided many mating systems that pervert the male dominance maxim. Females can take charge, one female might monopolize a group of males. (NHM, 2011c)

Similarly, a later display described how female hyenas dominate males, and sometimes mate with multiple partners. In order to describe the many facets of animal sexuality, the exhibition made widespread use of playful language of (human) sex. These descriptions of how animals and plants are 'at it', or the use of 'sex aids' by certain species, echoed the language of women's magazines, tabloid newspapers and popular evolutionary psychology (e.g. Judson, 2003). For example, a display about birds discussing how they also mate with individuals other than their main partner, described them as 'swingers' who 'cheat' on their 'spouses' by having 'secret flings'. Plays on, and nods to popular culture were also employed throughout the exhibition (e.g. 'Sexual Healing', 'Sexy Beast'), and were further developed in the publicity campaign. For example, one of the advertising posters ('Foxy Lady') showed a female orang-utan lounging on her side, with the tagline: 'You'd be amazed what nature gets up to. Come and discover its most bizarre and intimate secrets'. Continuing with this theme, the media campaign also had a celebrity focus, including a star-studded launch event and the novelty of Isabella Rossellini performing animal mating habits.

This playful approach was not consistent throughout the exhibition. When describing non-consensual sexual activity in the animal kingdom a more careful, and scientific tone was adopted. Rather than 'rape', signs used the term 'forced sex', to describe how 'male garter snakes coerce un-cooperative females to mate by suffocating them'. While the exhibition played with the language of human sexuality to describe what animals do, it was clear that at other times the behaviours in question were ones where the audience was not encouraged to draw such direct parallels. It was at these points where the exhibition moved to more scientific and morally neutral descriptions.⁵ Throughout the exhibition there were constant examples of this kind of overlap between human cultural tropes and animal behaviours, alongside shifts back towards more technical terminology.

The effect of this movement between scientific and everyday language was to communicate and connect with the target audience while maintaining a sense of scientific authority, but also to negotiate the moral boundaries of acceptable sexual behaviour without actually appearing to do so. By presenting rape/forced sex solely in the neutral and traditionally amoral language of science, the exhibition also risked implicitly supporting arguments that such behaviours are natural in humans

(Collins, 2000). At other times, the usage of pop culture and the language of tabloids and women's magazines worked to dispel the NHM's more traditionally respectable public image, particularly when discussing less morally risky topics. In doing this, the exhibition's curators drew upon ongoing traditions in popular evolutionary psychology and sociobiology, which strategically switch between everyday and technical language in order to connect with audiences while reinforcing epistemic authority (Cassidy, 2006; Oikkonen, 2013). An alternative strategy could have involved explicitly highlighting and discussing the parallels between humans and animals (and the human tendency to draw such parallels) in order to draw out further reflections from the audience.

Reflecting recent scientific debates about same-sex sexual behaviour in animals and the evolutionary basis of such behaviours, non-reproductive sex was represented as a natural behaviour throughout the exhibition. This stance was underlined in the final part of the animal section with several displays focused on animal homosexuality: 'documented in over 450 animal species' (likely drawing on Bagemihl, 1999). At the same time, the exhibit differentiated between 'innate' and 'circumstantial' homosexuality. The former was defined as a 'strong, often life-long attraction to the same sex [which] has a significant genetic and hormonal basis' and the latter undefined. Innate homosexuality was represented as the more natural of the two by drawing on evolutionary arguments that it may be associated with indirect genetic advantages. Visual images of penguins were used, again referencing their status as a cultural signifier of homosexual sexuality (Talbert and Matus 2012): seagulls were also presented as another species that rears young with same-sex partners.

We argue that this differentiation resulted in implicit judgements about these two forms of homosexuality, implicitly framing the 'circumstantial' type in terms of classic stereotypes about gay men's promiscuity. Adele penguins, for example, were described as 'slaves to their hormones [who] seek a variety of outlets for sexual release, especially when females are scarce. Their sex drives are so strong, they will attempt to mate with anything, including each other'.⁶ This was exacerbated by the use of the caption 'Relax', invoking the 1983 song by Frankie Goes to Hollywood and its strong cultural connotations with clubbing, promiscuity and the AIDS era (Fig. 3). On the one hand the presence of homosexuality in the exhibition should be viewed as a significant shift by depicting same sex behaviour as natural and therefore normal in a natural history context. However not all same sex behaviour was cast in this way, and we argue that human moral and cultural framings continue to play a part in drawing such distinctions.



Fig. 3: Homosexuality in the animal kingdom. Image © The Trustees of the Natural History Museum, London, reproduced with kind permission from The Natural History Museum, London.

Human sex and sexuality was addressed in the final section of the exhibition, which was reached by turning a corner and moving away from the animals displayed earlier. While the exhibition presented the flesh and bodies of animals as spectacle, detailing the unusual shapes of animal genitalia and orifices, there were no human equivalents to the dramatically embodied presentations of animal sex displayed. Instead, the human section contained non-sexual portraits of people (Fig. 2), and a series

of abstracted outlines of human bodies, referencing evolutionary psychology research on human attraction (Fig 4). While human tropes continually framed the animal exhibits, this section contained no references to animals, and focused exclusively on human emotions, morals and cultures. The majority of objects on display were cultural artefacts signifying desire, attraction and relationships. These objects presented a largely heteronormative and commercialised picture of human sexuality, with the use of artefacts such as rings, shoes, blindfolds, a framed photo of a male-female couple, and mock-ups of personal ads, again drawing upon and constructing ideas about class, taste and sexuality.



Fig. 4: Human bodies in *Sexual Nature*. Image © The Trustees of the Natural History Museum, London, reproduced with kind permission from The Natural History Museum, London.

Where appeals to nature had been a large component of the construction of animal sexuality and sexual behaviour, homosexuality included, by contrast human sexuality was described as flexible:

‘ideals change depending on sexual orientation, age, culture and media exposure’. Of the 11 ads on display, 8 described male-female pairings and only 1 purported to be from a man looking for another man. Here also non-monogamy was presented to the audience as a moral choice again in contrast to the natural framing for the same behaviours in the animal section. Rather than informing the audience, as was done earlier, at the end of the exhibition visitors were invited to reflect on these questions, and to contribute to the exhibition’s content. From the physical separation of the space, to the differing visual and rhetorical presentation and the absence of animal references, this section of the exhibition clearly signalled ideas of human separation and difference from animals, contradicting the ideas in the earlier part of the exhibit.

Backstage: Developing the exhibition

Speaking to those involved in making *Sexual Nature* allowed us to move beyond the exhibition itself and gain insights into how and why the exhibition was commissioned, the processes of development and how the content was finalised. In keeping with the changes in the museum sector outlined above, we learned that the commissioning of *Sexual Nature* was primarily driven by a desire to draw in a previously neglected audience. While the NHM is immensely popular with school parties, families with young children and older adults, younger adults (18-35) are far less likely to visit. A series of internal pitching workshops were held, after which an exhibition involving sex was seen as a ‘clear winner’ (EC, 01/07/11) in reaching young adults. Therefore a show themed on sexual behaviour in the animal kingdom began to be developed. Whilst aspects of sexuality are already present in other parts of the museum (e.g. displays about mating habits of animals, or the permanent *Human Biology* exhibit), *Sexual Nature* was specifically designed to bring sex to the forefront and present the science underpinning it in an appealing style for the audience that NHM wanted to engage with.

To develop the concept and content, the curatorial team held a series of focus groups with 18-35 year olds. In these sessions, the curators found their participants were clear: whatever was on display needed to be presented with ‘classiness’ (EC, 01/07/11) rather than crassness. Crude anthropomorphism was also rejected for being tasteless and disrespectful, as a curator explained in interview:

Things like putting a group of stags across like a group of teenagers, jeering on a street corner, and that went down... terribly with the target audience, so not only were we uncomfortable with it, but they were too. (EC, 01/07/11)

Instead, the show’s curators aimed to strike a balance between playfulness and dignity. Visitor outcomes were developed to encourage audiences to consider how sexual behaviour could drive evolution as much as other environmental conditions, and to think about what sexual behaviour looked like beyond the human experience. In addition, curators were keen to ‘really show some of the amazing things we have...that haven’t been on display for over 100 years’ (SC, 01/07/11). A good example of this was the redisplay of the taxidermied body of Guy the Gorilla – a silverback male who gained celebrity status at London Zoo during the 1970s. In *Sexual Nature*, Guy’s remains were displayed as an unnamed dominant male, captioned as ‘the boss’: an ironic usage for an individual particularly renowned for his gentleness. Following the close of the exhibition, in 2012 Guy was permanently redisplayed as himself in a new ‘Treasures’ gallery at NHM (Nicholls, 2014).

The first iteration of the show exclusively focused on animal behaviour, employing a narrative moving from the evolutionary purposes of sex and the ‘nuts and bolts’ (SC, 01/07/11) of genetic reproduction, to how animals select each other, mate and form relationships and family structures. As this narrative developed, the team alternated between gathering thematic information and looking into the museum’s archives for appropriate specimens. The final exhibition represented a balance between

this narrative, the availability of specimens, the physical space available, and the underlying science. Some complex topics (including social evolution, kin selection, parasites and sexually transmitted diseases) were left out entirely.

Following this process, companies were invited to bid for a tender to develop the final design of the exhibition, which was specifically framed around notions of classiness:

The company that had got that sophisticated adult style that we were going for [won the bid]; some were a bit textbook-y and sterile, but we felt that [the winning company] had got the balance about right. (EC, 01/07/11)

As well as the core scientific content described above, the curating team were also keen to include more recent findings about same-sex, non-reproductive and non-monogamous animal sexual behaviour. It was clear that this was motivated not only by a desire to communicate science, but also to counter politically conservative messages about the naturalness of mainstream heterosexuality and the nuclear family:

Well, I thought it was quite an important thing to include: you know, “homosexuality isn’t natural”, well, it certainly is, they do pretty much everything that we do. (SC, 01/07/11)

The curators described how, although the exhibition had initially been seen as a fairly straightforward exercise, the science behind animal sexuality turned out to be ‘extremely, fiendishly difficult’ (EC, 01/07/11). As a research institution, the NHM has its own in-house expertise available for exhibition development; the curatorial team also drew upon personal contacts in evolutionary biology to recruit external scientific consultants. The role of these experts was to guide – rather than choose – the selection of material, advise on accuracy where possible and draw curators’ attention to further topics of interest. Like the curators, the experts also looked for material which would be both ‘fascinating and at the same time scientifically interesting’ (AB 30/06/2011).

As the section on animal behaviour was being developed, the curating team decided that a final section on human sexual behaviour was also needed, in order to ‘reward’ (EC, 01/07/11) the audience at the end of the exhibition. Curators felt it important to allow the audience to reflect upon their own personal experiences and feelings based on what they had seen. As described above, unlike the section on animals, the human section was not populated by physical objects already owned by the museum – as one curator put it, ‘You couldn’t really go into the archives and pull out a human’ (SC, 01/07/11).⁷ As the curators developed the final section of the exhibit, they decided that the approach that they were using for the animals would not work for humans – whilst they felt confident displaying the science underpinning animal sexual behaviour, they were less assured when presenting the human equivalent:

We realized that there wasn’t any real scientific consensus as to why humans are behaving the way that they do, so we couldn’t apply the same approach to the rest of the exhibition because biology isn’t so strict for humans; we have all of these social and cultural things affecting how we behave that don’t apply to other animals. And then you get the evolutionary psychology, as well as the biology, and all other kinds of research going on, so we were finding conflicting information trying to explain why humans carry on and the diversity of our behaviour. So we thought, OK, we can’t really use our normal “authority on the natural world” approach, “this is what humans are doing and why” which is what people are expecting really, but to take a more personal approach and say “Think about what sex means to you”. (EC, 01/07/11)

The curators also acknowledged that, by focusing on desire rather than sex, they would not have to worry about how to display graphic depictions of bodies and sexual activities such as those which ran through the animal section. As part of this process, further outside experts – this time in evolutionary psychology – were consulted.

We only spoke to one of these consultants, who described working to reshape the expectations of the exhibition developers about what could and could not be shown, and to challenge their notions of what this field can say about human sexuality (AP, 23/09/11). As with the animal section, ideas were conceived around possible exhibition pieces – such as displays of facial symmetry or waist-hip ratios – and then checked with reference to scientific validity. Our academic informant felt that these ideas, familiar from popular evolutionary psychology (Cassidy, 2007), were insufficiently nuanced and not reflective of the current state of the field. They advised instead that the social and cultural construction of human attraction should also be highlighted (AP, 23/09/11). However, we understand from curatorial staff that other evolutionary psychologists consulted offered differing views. These appear to have been closer to popular ideas, were probably easier to integrate with the conventions of museum display and made their way into the final exhibition (see Fig. 4).

Alongside consulting external scientific experts, towards the end of the process, the NHM team took the unusual step of consulting with the LGBT rights organisation Stonewall. The curators had already found that, like research on human sexuality, the literature on homosexuality in animals and humans was ‘not black and white’ (SC, 01/07/11). Stonewall was consulted on how non-heterosexual sexualities had been presented throughout which according to the curators, made them ‘think about that area in a completely different way’ (EC, 01/07/11). Stonewall also offered advice around language use – for example, recommending that ‘orientation’ be used in place of ‘preference’ (EC, 01/07/11). They also supported the reframing of the traditional concept of the nuclear family:

Stonewall were very interested in the concept of family, just thinking, you need a male and female, but there are different options now, you know, surrogacy and so on, and they were really keen that we put that in. (EC, 01/07/11)

As far as we are aware, Stonewall made no comment on the distinction drawn between innate and circumstantial homosexuality drawn in the exhibition, or the cultural reference points that were used.

3.3 Discussion: understanding the exhibition

Our analysis of the backstage development of *Sexual Nature* confirms Macdonald’s (1998) contention that exhibition content can be understood much better once this process of negotiation between multiple actors, organisations, ideas and objects is made visible. In acknowledging the new role for museums in an increasingly commercialised marketplace, McPherson (2006) argues that they should not be afraid of using entertainment as a means of attracting wider and more diverse publics; but that they should also make use of entertainment’s capacity for education. In many respects, the use of sex, combined with canny cultural referencing certainly fulfilled these criteria, facilitating the development of an exhibition which attracted widespread publicity, created new audiences and broke new ground in how popular natural history portrays animals’ sexual lives. *Sexual Nature* also appeared to succeed in its wider goals of communicating several complex, contested and fast moving areas of scientific research in an accessible and fun way.

The dominance of concerns around attracting new audiences across the museum sector meant that the choice of topic itself was led by NHM’s preconceived ideas about the young adult (18-35) audience and what would appeal to them (e.g. Litt, 2012). In line with Liddiard (2004) it is unsurprising that

NHM settled on sex as a means of achieving this goal. That public participants from this demographic were then consulted at a very early stage confirms this audience-led focus. Having settled on this topic, the museum proceeded to develop the exhibition, employing sex as a recruitment strategy, but rapidly moved beyond this in a complex series of moves which pulled the exhibition's narrative in several directions. They employed their standard practices of exhibition development: reviewing and summarising the science; assessing and choosing objects from the collections; and commissioning design and artwork. As is clear from our description, they encountered complications, particularly at the first of these stages. NHM London is used to acting as, in their own words, 'a voice of authority on the natural world' (NHM, 2011b): however, as they rapidly discovered, the topic of sex challenged their ability to do this.

Initially, this manifested in the problems of communicating uncertain and contested scientific issues. Whilst MacDonald and Silverstone (1992) describe the challenges for a museum in representing a scientific controversy such as food poisoning, sexuality introduces further layers of uncertainty and social complexity. With aspects of the topic beyond the NHM's usual domain of the biological and earth sciences, the museum found itself in a position where it had to move beyond its core areas of expertise and turn to other sources of epistemic authority – firstly social scientists, then Stonewall, but ultimately to its own audience. This occurred at the beginning of the process, where audiences and focus groups led decisions; in the middle, when consulting social scientists and extending the exhibition into a separate human section; and at the end, leading to a focus in the human section on meaning, emotion, visitor participation and commerce. The focus groups were also instrumental in setting the tone of 'classiness' with which the science would be portrayed and communicated.

Multiple readings of the exhibition are of course possible: indeed, this became immediately clear in our own varying reactions after visiting *Sexual Nature*. While we do not consider these to be in any way representative of the actual audiences who visited the exhibition, the possibility of multiple readings highlights how much sexuality continues to be a topic undergoing constant negotiation and debate. Read in the light of traditions of popular natural history presentations of sexuality and gender, *Sexual Nature* can be seen as a radical break, and would likely be seen differently and as even more challenging to political and religious conservatives. Seen from a socially liberal perspective, perhaps unfamiliar with the biology, the exhibition aligns well with a developing political and social consensus around the acceptability of homosexuality, same-sex marriage and parenting. A different interpretation could be made from a more radical queer perspective, which would read the exhibition as still very heteronormative, and reflecting yet another set of messages – this time about appropriate forms of homosexuality and other sexual behaviours (e.g. Muñoz 2009, Sender, 2003). While the decision to consult Stonewall about these issues was a canny one, this campaigning body has been criticised by other LGBT people for its stance, in particular for promoting a very mainstream, acceptable version of gay identity (e.g. monogamous, married, white, gay, middle class), excluding other queer identities and lifestyles (Mowlabocus 2010). Following extensive criticism for this lack of diversity, Stonewall has recently launched a series of consultations and announced that it would formally extend its remit to campaign for trans equality (Stonewall, 2015).

Given the potential for such radically different readings, any exhibition dealing with these topics will inevitably have political implications and contribute to these processes of negotiation around sexuality. Audience research, although beyond the scope of this article, would no doubt have opened up the exhibition, providing further perspectives we have not thought of. It is also worth considering how such culturally and politically specific representations might travel when an exhibition like this tours internationally. We know that *Sexual Nature* toured, initially to Paris, and then on to Cleveland, Ohio. From the publicity in Cleveland, we can see, perhaps, evidence of the exhibition being reframed to accommodate North American audiences, with a change in title to *Nature's Mating Games: Beyond the Birds and the Bees*, and children being advised to stay away (Ewinger, 2013). Further, an exhibition

at Canada's National Science and Technology Museum entitled *Sex: A Tell-All Exhibition* was forced to raise the age limit for entrance following public complaints and criticism from the country's Heritage Minister (Raj, 2012). By contrast, when Oslo's Natural History Museum opened their 2006 *Against Nature* show it attracted similar criticisms; however in this case they were ignored and the exhibition was well-received by visitors – including family groups (Seidler, 2006). This illustrates how museums have negotiated varying cultural norms around sex, largely through adjusting the framing and publicity of such exhibitions.

Rather than expecting any of us to 'leave our baggage at the door', we argue that the audience driven approach adopted by the NHM could be extended. For example, richer public conversations about the science – and politics – of sex and sexuality would be brought about by an acknowledgement that we all, always, inevitably, carry cultural associations and personal experiences of sex with us. To recognise and incorporate varied readings of science within and across cultures is challenging, but recent developments in participatory mechanisms for exhibit development suggest ways forward. For example, Boon's (2011) concept of 'co-curation' in developing public approaches to the history of science, technology and medicine may provide a useful model. Such an approach includes broadening the range of experts consulted beyond the natural sciences and beyond academia (Boon, Vaart and Price, 2014). Approaches of this type would encourage more nuanced conversations about the politics and uncertainties of the sciences, which at present still tend to be 'tidied away along with the cleaning equipment' (Macdonald, p. 2) in most public science.

4. Conclusion

Following Macdonald's (1998) argument that the display of science in museums is a space in which the science and culture are co-constructed, we argue that the *Sexual Nature* exhibition both reflected and contributed to broader processes of social and political change around sexualities. By countering longstanding heteronormative and gendered traditions in popular natural history, as well as broader cultural norms, *Sexual Nature* was rightly acknowledged as ground-breaking, brave and successful (Anon, 2012). The exhibition mobilised scientific knowledge in order to present non-reproductive sexual behaviour as natural and to counter older traditions in natural history representations of sexuality. We view this as the NHM lending its considerable institutional authority to new scientific understandings of animal sexual behaviour.

However, the curators' assumption that it would be possible to present the science of sex as morally neutral, reliable and uncontested, in line with traditions of public science (Turner, 1980), proved to be incorrect. As we have outlined above, sex and sexuality are far from straightforward, bringing together as they do the biological, social, cultural and political. We found that the topic challenged the epistemic authority of the museum: this is reflected in the movement back and forth between human/animal similarity and difference, also between scientific and moral language throughout the exhibition. This movement related to the nature of the sex involved: topics such as non-monogamy were discussed using the playful language of popular culture, while risky subjects like non-consensual sex retreated into scientific neutrality. We have argued that this enabled the NHM to maintain its epistemic authority whilst also negotiating the moral boundaries of acceptable sexual behaviour.

The topic of sex pushed the curators far beyond their usual expertise in the natural sciences towards the unfamiliar territory of the social and human. The shift in presentation between the animal and human, whereby the human section of the exhibition focussed on desire not sex, including no explicit imagery, reflects this. While this decision may have been influenced by concerns about offending audiences, we found that a more important factor was the uncertainties and controversies associated with the sciences of human sexuality. Alongside consulting evolutionary biologists and psychologists, the NHM took the unusual step of consulting a campaign group for advice on the exhibition's framing

and language of sexuality. This *ad hoc* search for alternative sources of expertise contributed to some of the confusions in the final exhibition, compounded by the limited but crucial input of target audiences via focus groups and design consultants.

The tropes of classiness in the exhibition content and the upmarket design of the exhibition space functioned to legitimize explicit descriptions of sexuality in the prestigious environment of the NHM. These aesthetics also communicated additional aspirational and class-based messages about taste and sexuality (Bourdieu, 1984). When brought up against the other aims of the exhibition – communicating evolutionary biology, and countering ideas of the naturalness of the traditional nuclear family – this created a rich but confusing web of contradictory messages. These contradictions were in part explained by our finding that the primary drive for the exhibition as a whole was not the communication of new science, but a result of audience recruitment goals; sex was seen primarily as a hook to draw in a young adult audience. We have argued that adopting Boon et al's (2014) 'co-curation' approach to exhibition building would extend this audience driven approach whilst also producing a more coherent and nuanced exhibition about the science of sex.

Finally, this study has confirmed the value of Macdonald's (1998) approach to analysing museum exhibitions and public science more widely. Our understanding of how the contingencies and complexities involved in conceiving, negotiating and producing this exhibit shaped its final form would have been severely limited without an exploration of the backstage. The opening sign at *Sexual Nature* encouraged its visitors to 'Leave your baggage at the door', but we have shown the difficulties and complexities involved in attempting to follow this deceptively simple advice. In developing, visiting and analysing this exhibition, no-one involved – curators, experts, audiences or ourselves as analysts – was able to divorce their own social, cultural and political contexts from the material in the exhibition. Nor, we argue, should they.

Notes

¹ For the purposes of clarity, in this article non-reproductive sexual behaviour can be defined as any sexual interaction that does not produce offspring, including (but not exclusively) that between (human or nonhuman) individuals of the same sex. We distinguish this from sexuality, understood as a series of *human* social categories and identities applied to both humans and nonhumans in order to interpret and understand these behaviours.

² This analysis draws extensively on exhibition captions, texts and publicity: as such our use of single quotation marks in this paper refer to, and quotes directly from, these texts. Any such material can be referenced as NHM (2011c) *Sexual Nature*, Natural History Museum, Exhibition Road, London, 1 July 2011.

³ The 'Green Porno' films are available online at <http://www.sundancechannel.com/greenporno/>

⁴ For further details about the exhibition, please refer to NHM (2011d).

⁵ It is not that surprising that the language used here was more careful: E.O. Wilson's (1975) description of this behaviour as 'rape' drew some of the heaviest criticism during the Sociobiology controversy of the 1970s, as well as more recently in evolutionary psychology contexts (e.g. Collins, 2000).

⁶ For more detail on early 20th C naturalists' reactions to (and censorship of) Adélie penguins' sexual habits, see Russel, Sladen and Ainley (2012).

⁷ The NHM does in fact have a Human Remains Unit which handles the repatriation of paleoanthropological artifacts and human remains held by the museum. However, these objects were clearly not considered to be suitable for *Sexual Nature*.

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